

Title (en)

Block coding scheme for fractional-bit transmission.

Title (de)

Blockkodierungsschema für die Übertragung von partiellen Bits.

Title (fr)

Schéma de codage en blocs pour la transmission de bits fractionnaires.

Publication

EP 0406507 A1 19910109 (EN)

Application

EP 89810516 A 19890707

Priority

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Abstract (en)

In a trellis-coded modulation (TCM) transmission system, data bits are grouped into bit blocks (13), and each such bit block is encoded to select a fixed number w of symbols from a given symbol set (14). The symbols are subdivided into subsets, and each subset includes a few outer symbols and a greater number of inner symbols. Each symbol represents one particular transmission signal value. A first portion (17) of each bit block is separated into w bit subgroups, each of which is separately expanded by a convolutional encoder (20) to obtain a bit combination (19, 15) for specifying one of the symbol subsets. The remaining portion (21) of each bit block is expanded by a block coder (22) to obtain w bit subgroups (23), each being a bit combination (25, 16) for selecting one particular symbol out of a specified subset; outer symbols are selected less frequently than inner symbols (e.g. one outer symbol per bit block). The arrangement allows to transmit a non-integer number of data bits per symbol, and further allows to operate with single-symbol TCM, i.e. transmitting and decoding each symbol separately.

IPC 1-7

H04L 27/00

IPC 8 full level

H03M 7/14 (2006.01); **H03M 7/30** (2006.01); **H04L 27/34** (2006.01)

CPC (source: EP US)

H04L 27/3433 (2013.01 - EP US); **H04L 27/3477** (2013.01 - EP US)

Citation (search report)

- [A] EP 0122805 A2 19841024 - CODEX CORP [US]
- [AD] IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATION, vol. SAC-2, no. 5, September 1984, pages 632-647; G. FORNEY et al.: "Efficient modulation for band-limited channels"

Cited by

WO9217972A1; EP0566330A3; EP0541217A1; US5623516A; EP0707402A3; US5349816A; EP0566331A3; EP0533363A3; FR2647990A1; EP0836305A3; US5448592A; EP2413530A1

Designated contracting state (EPC)

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DOCDB simple family (application)

EP 89810516 A 19890707; DE 68915758 T 19890707; JP 17764190 A 19900706; US 40041589 A 19890830